IDENTIFICATION OF A MICROSATELLITE MARKER LINKED TO THRIPS (*Stenchaetothrips biformis*) RESISTANCE IN RICE USING BULK SEGREGANT ANALYSIS

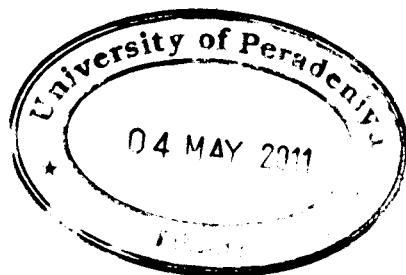**PROJECT REPORT PRESENTED BY**

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IDENTIFICATION OF A MICROSATELLITE MARKER LINKED TO THRIPS (*Stenchaetothrips biformis*) RESISTANCE IN RICE USING BULK SEGREGANT ANALYSIS

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Rice thrips (*Stenchaetothrip biformis*) are one of the pests infesting rice cultivation in Sri Lanka causing a significant damage at early stages of the plant growth. All modern rice varieties are susceptible to thrips attack. Planting of resistant cultivars would be an effective and environmentally sound strategy to minimize economic losses from thrips infestation in rice. To facilitate breeding programme of developing thrips resistant cultivars, present study was conducted to identify a microsatellite marker linked to thrips resistance in rice using bulk segregant analysis. F_2 progeny (149 individuals) derived from a cross between Dahanala (thrips resistant) and Suduru Samaba (thrips susceptible) rice varieties was used as the segregating population for thrips resistance. Leaf trichome density of all the F_2 segreagnts was also analyzed to identify the nature of relationship between trichome density and the thrips resistance. Frequency distributions of the thrips damage score and the trichome density resulted with the analyzed segregating population indicated quantitative and polygenic inheritance of the both traits. Significant negative correlation (-0.378, $P < 0.05$) was identified between thrips damage score and the trichome density. Presence of trichomes explained 14.3% of variation for thrips resistance in F_2 segregants.

Out of the 18 parental polymorphic microsatellite markers, expected polymorphism between bulks was resulted with RM 279 and RM 277 markers. Further, 53 F_2 segregants were genotyped using these two polymorphic markers. According to the analysis, expected Mendelian segregation was observed at the RM 279 microsatellite